

Notice of Allowability

Application No.

10/665,882

Examiner

William Kraig

Applicant(s)

RINERSON ET AL.

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Applicant's amendments dated 8/6/2007.
2. ☒ The allowed claim(s) is/are 11, 19-21, 26 and 29-31.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Claim 31 is amended to read:

--The resistive memory device of Claim 30, wherein:

the treatment, to which the at least one interface is subjected, is directed towards changing properties of the perovskite.—

Authorization for this examiner's amendment was given in a telephone interview with Trueman Denny on 9/4/2007.

Allowable Subject Matter

2. Claims 11, 19-21, 26 and 29-31 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 11, 19-21 and 29-31, the closest prior art (Zhuang et al., Buckley and Liu et al. (all of record)) fails to disclose (by themselves or in combination) there having been a chemical reaction in the multi-resistive state material (claim 11) or between one of the conductive electrodes and the multi-resistive state element (claim

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19) in combination with the additionally claimed features, as are claimed by the Appellant. Such a chemical reaction would result in there being products of said reaction remaining in the structure, which is neither taught nor suggested by the above-cited closest prior art. Thus, the Appellant's claims are determined to be novel and non-obvious.

Regarding claim 26, the closest prior art (Zhuang et al., Buckley and Liu et al. (all of record)) fails to disclose (by themselves or in combination) the at least one treatment being caused by a bombardment by inert ions in combination with the additionally claimed features, as are claimed by the Appellant. The bombardment of inert ions would result in inert ions remaining in the structure, which is neither taught nor suggested by the above-cited closest prior art. Thus, the Appellant's claims are determined to be novel and non-obvious.

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art (Kang, Hsu and Rinerson) disclose similar semiconductor devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William Kraig whose telephone number is 571-272-8660. The examiner can normally be reached on Mon-Fri 7:30-4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken Parker can be reached on 571-272-2298. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

WFK
09/04/2007

A handwritten signature in black ink, appearing to be 'K Parker', written over a horizontal line.

KENNETH PARKER
SUPERVISORY PATENT EXAMINER